

Claims

- 10 1. A method for the manufacture of a more particularly fluid power driven actuator device comprising an actuator movingly arranged in a housing, and a position detecting means, in the case of which by means of an exciting current available from a current source a concentric magnetic field may be produced in a magnetostrictive wave guide for arrangement on a measurement path along a working stroke of the actuator, such magnetic field being able to be so influenced by a position indicating magnet arranged on the actuator that an ultrasonic wave is produced deforming the wave guide, and in the case of which a measurement means is provided for the position of the position indicating magnet on the basis of measurement of the transit time of the ultrasonic wave, wherein the wave guide and a return guide for the reflux of the exciting current to the current source are made available to a predetermined suitable degree for different lengths of measurement path at an assembly stage, at which the actuator device is mounted and the wave guide is cut to a length on the assembly stage suitable for the measurement path of the respective actuator device to be produced and is connected electrically with the return guide.
- 20 2. The method as set forth in claim 1, wherein the act of arrangement on the assembly stage is such that the
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ends to be connected of the wave guide and of the return guide are open.

5 3. The method as set forth in claim 1, wherein the act of arrangement on the assembly stage is such that ends, which are opposite to the ends to be connected of the wave guide and of the return guide, of the wave guide and/or of the return guide are pre-fitted on the measurement means and/or the current source.

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10 4. The method as set forth in claim 1, wherein the wave guide is welded and/or soldered and/or connected by means of a bushing and/or connected by a contact terminal arrangement, to the return guide.

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15 5. The method as set forth in claim 4, wherein the bushing is designed in the form of an oscillation damper for the ultrasonic wave.

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20 6. The method as set forth in claim 1, wherein an oscillation absorbing means is arranged at an end, which is remote from the measurement means, of the wave guide for damping the ultrasonic wave.

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25 7. The method as set forth in claim 1, wherein for damping oscillations a drop of an adhesive composition is applied to the wave guide.

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30 8. The method as set forth in claim 1, wherein the wave guide is arranged in such a manner allowing oscillations on the housing of the actuator device that the ultrasonic wave may be propagated.

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35 9. The method as set forth in claim 1, wherein the wave guide and/or the return guide are at least partly

arranged in a groove and/or a hole extending along the working stroke of the actuator, in the housing of the actuator device.

5 10. The method as set forth in claim 1, wherein the wave guide and/or the return guide are arranged in a guard tube and wherein the guard tube is arranged along the working stroke of the actuator on the housing of the actuator device.

10 11. The method as set forth in claim 9, wherein the groove and/or the hole and/or the guard tube are filled with a composition which is elastic as regards the transmission of oscillations.

15 12. The method as set forth in claim 1, wherein the measurement means and/or the current source and/or a signaling means for discrete position data of the position indicating magnet are arranged on the actuator device and more especially on a housing cover of the actuator device.

20 25 13. The method as set forth in claim 1, wherein the measurement means is set by calibration to a length, corresponding to the length of the working stroke, of the wave guide.

30 35 14. An actuator device comprising an actuator movably arranged in a housing and adapted to be moved, more particularly by fluid power, and a position detecting means, in the case of which using an exciting current, provided by a current source, in a magnetostrictive wave guide, which is arranged along a working stroke of the actuator, a concentric magnetic field may be produced, such field being able to be so influenced that an ultrasonic wave is produced with a deformation of the wave

guide and in the case of which a measurement means is present for the position of the position indicating magnet with the aid of measurement of the transit time of the ultrasonic wave, wherein the wave guide and/or the return guide are arranged at least one partly and directly without a separate guard tube in a groove and/or a hole, which extends along the working stroke of the actuator, in the housing of the actuator device.

10 15. The actuator device as set forth in claim 14, wherein the position indicating magnet is magnetized athwart the working stroke and/or the wave guide is constituted by a wire.

15 16. The actuator device as set forth in claim 14, wherein the wave guide is connected with the return guide by welding and/or by soldering and/or by means of a bushing.

20 17. The actuator device as set forth in claim 14, wherein the bushing constitutes a component of an oscillation absorbing means.

25 18. The actuator device as set forth in claim 14, comprising a signaling means for the supply of discrete position data respecting the position indicating magnet.

30 19. The actuator device as set forth in claim 14, comprising an output means for the output of substantially continuous position data with respect to the position indicating magnet.